

Applicant : Graeme C. McKinnon
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Filed : August 10, 2000
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Attorney's Docket No.: 10527-651RE1 / PC8721B

Amendments to the Claims:

Please amend claims 28, 40, 49, 50 54 and 56 as follows:

28. (thrice amended) A medical apparatus for imaging a wall of a body cavity in a patient by interacting with a magnetic resonance imaging (MRI) system which generates a magnetic field gradient and electromagnetic (EM) radiation externally from the patient and transmits the gradient and EM radiation into the patient and receives a response signal indicative of a resonant response from the patient, the apparatus comprising:

an open wire length antenna including an open conductor length configured to be inserted into the cavity and provide the response signal, based on the resonant response from a region of the patient closely proximate the antenna, to the MRI system, where the open conductor length includes at least one open ended conductive element; and

a controller coupled to the antenna and configured to receive the response signal to obtain an image of the cavity wall proximate the antenna.

40. (thrice amended) A method of generating an image of a wall of a body cavity in a patient, the method comprising:

inserting an open wire length antenna including an open conductor length into the cavity, where the open conductor length includes at least one open ended conductive element;

generating a magnetic field gradient and electromagnetic (EM) radiation external from the patient and transmitting the gradient and EM radiation into the patient;

transmitting a response signal, based on a detected resonant response from a region of the patient closely proximate the antenna, to a magnetic resonance imaging (MRI) processor;

receiving the response signal at the MRI processor; and

obtaining an image of the cavity wall proximate the antenna based on the response signal.

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49. (thrice amended) A method of generating an image of a blood vessel wall of a blood vessel in a patient, the method comprising:

inserting an open wire length antenna including an open conductor length into the blood vessel, where the open conductor length includes at least one open ended conductive element;

passing the antenna through the blood vessel to a site to be imaged;

generating a magnetic field gradient and electromagnetic (EM) radiation external from the patient and transmitting the gradient and EM radiation into the patient;

transmitting a response signal, based on a detected resonant response from a region of the patient closely proximate the antenna, to a magnetic resonance imaging (MRI) processor;

receiving the response signal at the MRI processor;

and obtaining an image of the blood vessel wall proximate the antenna based on the response signal.

50. (thrice amended) A medical apparatus for imaging a blood vessel wall of a blood vessel in a patient by interacting with a magnetic resonance imaging (MRI) system which generates a magnetic field gradient and electromagnetic (EM) radiation external from the patient and transmits the gradient and EM radiation into the patient and receives a response signal indicative of a resonant response from the patient, the apparatus comprising:

an open wire length antenna configured to be inserted into the blood vessel and

passed along the blood vessel to a site to be imaged and to provide the response signal, based on the resonant response from a region of the patient closely proximate the antenna, to the MRI system, the antenna including an open conductor length comprising at least one open ended conductive element; and

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a controller coupled to the antenna and configured to receive the response signal and repeatedly calculate antenna location to obtain an image of the blood vessel wall proximate the antenna.

54. (thrice amended) A medical apparatus for imaging a body cavity wall of a body cavity in a patient by interacting with a magnetic resonance imaging (MRI) system which generates a magnetic field gradient and electromagnetic (EM) radiation external from the patient and transmits the gradient and EM radiation into the patient and receives a response signal indicative of a resonant response from the patient, the apparatus comprising:

an MRI open wire length antenna configured to be inserted into the body cavity and passed along the body cavity to a site to be imaged and to provide the response signal, based on the resonant response from a region of the patient closely proximate the antenna, to the MRI system, the antenna including an open conductor length comprising at least one open ended conductive element.

56. (twice amended) A method of generating an image of a wall of a body cavity in a patient, the method comprising:

inserting a magnetic resonance imaging (MRI) open wire length antenna into the body cavity, the antenna including an open conductor length comprising at least one open ended conductive element;

passing the MRI open wire length antenna through the body cavity to a site to be imaged; and

obtaining an MRI image of the body cavity wall proximate the antenna.